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National Oceanic and Atmospheric Administration
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NMFS Tracking No.:
2003/00420

July 16, 2003

Daniel Mathis
U.S. Department of Transportation
Federal Highway Administration
Suite 501 Evergreen Plaza
711 South Capitol Way
Olympia, Washington 98501-1284

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for the Aldridge Road Bridge Replacement Project, Dry Creek, WRIA No. 32, Walla Walla County, WA

Dear Mr. Mathis:

Enclosed is a document containing a Biological Opinion (Opinion) prepared by NOAA's National Marine Fisheries Service (NOAA Fisheries) pursuant to section 7 of the Endangered Species Act (ESA) on the effects of the proposed the Aldridge Road Bridge Replacement Project, Dry Creek, WRIA No. 32, Walla Walla County, Washington. In this Opinion, NOAA Fisheries concludes that the proposed action is unlikely to jeopardize the continued existence of Middle-Columbia River steelhead. As required by section 7 of the ESA, NOAA Fisheries includes reasonable and prudent measures with nondiscretionary terms and conditions that NOAA Fisheries believes are necessary to minimize the impact of incidental take associated with this action.

This document contains a consultation on Essential Fish Habitat (EFH) pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and its implementing regulations (50 CFR Part 600). NOAA Fisheries concludes that the proposed action may not adversely affect designated EFH for list salmon, groundfish, or coastal pelagic species. As required by section 305(b)(4)(A) of the MSA, included are conservation recommendations that NOAA Fisheries believes will avoid, minimize, mitigate, or otherwise offset adverse effects on EFH resulting from the proposed action. As described in the enclosed consultation, 305(b)(4)(B) of the MSA requires that a Federal action agency must provide a detailed response in writing within 30 days of receiving an EFH conservation recommendation.

If you have any questions regarding this letter, please contact Mike Grady of my staff in the Washington Habitat Branch Office at (206) 526-4645 or mike.grady@noaa.gov.

Sincerely,

for

D. Robert Lohn
Regional Administrator

cc: Michael Kulbacki, FHWA

Endangered Species Act – Section 7 Consultation
Biological Opinion
and
Magnuson–Stevens Fishery Conservation and Management Act
Essential Fish Habitat Consultation

Aldridge Bridge Replacement Project, WRIA 32, Walla Walla County, Washington
NMFS Tracking No.: 2003/00420

Agency: Federal Highway Administration

Consultation Conducted By: National Marine Fisheries Service
Northwest Region

Issued by: Date: July 16, 2003

D. Robert Lohn
Regional Administrator

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1.0 INTRODUCTION

This document transmits the NOAA's National Marine Fisheries Service's (NOAA Fisheries) Biological Opinion (Opinion) and Essential Fish Habitat (EFH) consultation based on our review of a project to replace the Aldridge Bridge in Walla Walla County, Washington. Aldridge Bridge crosses Dry Creek, a tributary to the Walla Walla River (WRIA 32), which is a tributary to the Columbia River. Dry Creek is located in the Mid-Columbia River (MCR) steelhead (*Oncorhynchus mykiss*) evolutionarily significant unit (ESU) and is EFH for chinook (*O. tshawytscha*) salmon.

1.1 Background Information and Consultation History

The Federal Highway Administration (FHWA) concluded that the project proposed by Walla Walla County Public Works Department, was likely to adversely affect MCR steelhead. The existing bridge is in poor structural condition and sub-standard for existing traffic. The proposed replacement will upgrade the bridge to county highway standards and structural capacity. In addition, the new bridge will have a longer span and is designed to reduce an existing constriction of the stream channel at the project site.

The document is based on information provided in the Biological Assessment (BA) (FHWA 2002). Formal consultation was initiated on April 25, 2003, when NOAA Fisheries received a letter and a BA describing the project from the FHWA.

1.2 Description of the Proposed Action

The FHWA proposes to fund, in whole or in part, a construction project to be constructed by Walla Walla County. The Walla Walla County Public Works Department proposes to replace the Aldridge Bridge, which is the Smith Road overcrossing of Dry Creek in Walla Walla County, Washington. The existing 24-foot long by 20-foot wide, single-span timber bridge will be demolished and replaced by a 55-foot long by 32-foot wide single-span concrete bridge in the same location as the existing bridge. The longer span of the new bridge will permit the abutments to be moved farther back from the stream channel.

1.2.1 Construction of the Temporary Stream Bypass

The in-water work area will be isolated and fish removed. The creek will be diverted by redirecting approximately 60 linear feet of above-ground stream flow of Dry Creek through one or more culverts placed in the stream channel. Revetments and concrete ecology blocks (or a similar temporary diversion) will be installed at the upstream end of the bypass inlet to divert the entire flow of the stream into the culvert. A similar revetment will be installed at the downstream end of the bypass to prevent backwater from entering the work area. After the stream diversion is completed, the creek channel between the upstream and downstream revetment areas will be temporarily filled with clean gravel. Before placing fill, geotextile fabric will be installed to delineate the fill from natural stream substrates. The filled area will be used as a temporary work area during demolition and construction phases. On or before September 30, 2003 (after bridge demolition and cleanup work is completed), a front-end loader will be used to carefully remove the gravel fill, bypass culvert, and diversion revetments from the stream channel. The revetments and culvert will then be removed and stream flows redirected back to the original channel.

1.2.2 Work-area Isolation and Fish Handling

Fish removal and salvage from the dewatered portions of Dry Creek will be conducted by Washington Department of Fish and Wildlife (WDFW) biologists or other qualified fisheries biologists. Additionally, fish salvage results will be documented in writing and reported to NOAA Fisheries (see attached Appendix 1).

To prevent additional fish from moving into the work area, block nets will be installed at upstream and downstream locations. Block-net mesh size, length, type of material, and depth will vary based on site conditions. Generally, block-net mesh size is the same as the seine material (approximately one-fourth-inch stretched). The upstream net will be installed first. Biologists then will stretch a second net across the wetted channel and walk downstream, "herding" fish out of the work area. Any fish remaining in the work area will be removed using approved electroshocking techniques (NOAA Fisheries 2000a). During fish-removal activities, the block nets will be left in place and checked at least once daily to ensure that they are functioning to prevent fish from re-entering the work area. Monitoring for effectiveness and debris removal will be conducted as necessary. A designated individual will monitor and maintain the nets.

All captured aquatic life will be immediately put in five gallon buckets filled with clean stream water. Water temperatures will be frequently monitored to ensure the specimens are not unduly stressed. Fish will be identified, and enumerated (Appendix 1). After each pass, all fish will be released upstream of the work area.

1.2.3 Demolition of the Existing Bridge

The existing bridge will have to be removed before construction of the new bridge can begin. Demolition will begin only after the stream is dewatered (as described in section 1.2.2).

The existing bridge is a single timber span supported by two timber abutments. The existing abutments are located below the ordinary high water mark (OHWM) of Dry Creek. The desirable method of bridge removal is to demolish and remove the existing bridge in large pieces. The debris from the demolished bridge will collect on geotextile fabric placed over the culvert(s), and then will be removed using a track-type excavator or similar equipment. The abutments of the existing bridge are constructed on timber piles, which should facilitate complete removal. The existing bridge and abutments will be removed using mechanical means. Hand-held equipment such as power saws may also be used to complete the removal effort. Demolition debris will be removed to either a recycling facility or an approved disposal site.

1.2.4 Construction of the New Bridge

Work on the replacement bridge will begin with the construction of the bridge substructure. The new single-span bridge will require the construction of abutments on the north and south banks. The new abutments will be set back at least 10 feet from the top of the stream banks and constructed of poured-in-place concrete. No concrete will be poured below the OHWM of Dry Creek.

Once the replacement substructure is in place, decked girders will be raised onto the substructure with lifting equipment located on the banks above the OHWM, and the road approach from SR 12 will be widened from 20 feet to approximately 32 feet. The last phase of construction will involve the installation of beam guardrails on the approach roadway and concrete Jersey barriers on the bridge.

1.2.5 Bank Reconstruction

Existing banks outside the bridge-removal area will remain undisturbed. However, reconstruction of the bank in the area of the existing bridge will be necessary because the new abutments will be constructed landward of the existing abutments. Bank reconstruction will include the construction of a two to one ratio of slopes covered in riprap under the bridge. The riprap will be overlain by native topsoil and covered with jute-fiber geotextile to stabilize the topsoil. Round river rocks will be installed along the toe of the slope below the OHWM. Willow slips will be planted at the toe of the streambanks to enhance the long-term bank stability. The area of bank stabilization will extend 15 feet beyond the limits of the new bridge deck.

1.2.6 Construction of Stormwater Facilities

Presently, stormwater treatment is not provided for the existing roadway and bridge. Walla Walla County proposes to minimize effects of the added impervious surface by constructing catch basins and water quality treatment swales at the ends of the new bridge. Catch basins will direct stormwater to open-channel swales that will prevent untreated stormwater from entering Dry Creek. Water contained within the swales will be infiltrated into the ground. The roadside conveyance system for this project has been designed to provide stormwater treatment for 250% of the new impervious surface.

1.2.7 Removal and Planting of Riparian Vegetation

Two 14-inch diameter locust trees immediately adjacent to the bridge will be removed. Upon completion of bridge construction, six native cottonwood trees and willow slips will be planted in the riparian area in the vicinity of the bridge.

1.2.8 Timing of Project Activities

Construction is expected to take up to four months, from July 15 through November 15, 2003, but in-water work will be limited to the period between July 15 and September 30. The creek will be returned to its natural channel by no later than September 30, the earliest date that adult MCR steelhead might begin migrating through the action area. After stream flow is returned to its natural channel, work will be limited to the construction of the deck, installation of new beam guardrails, construction of stormwater treatment facilities, and other out-of-water construction activities.

1.3 Description of the Action Area

The action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR 402.02).

The action area is defined as the stream channel which includes the water, and land (including submerged land) from approximately 250 feet upstream of the existing Aldridge Bridge to approximately one river mile downstream from Aldridge Bridge. The action area also includes the adjacent riparian zone within the construction area and all areas affected by the project including staging areas, catch basins, and roadways.

2.0 ENDANGERED SPECIES ACT

2.1 Biological Opinion

2.1.1 Status of Species

Middle Columbia River steelhead were listed as threatened under the ESA in 1999 (64 FR 14517). Steelhead of the Snake River Basin are not included in the MCR steelhead ESU.

All steelhead in the Columbia River Basin upstream from the Dalles Dam are summer-run, inland steelhead (Busby *et al.* 1996). Summer steelhead generally return to freshwater between May and October after spending one or, more commonly, two years in oceanic waters (Busby *et al.* 1996, Wydowski and Whitney 1979). Returning steelhead in the Columbia River generally spend an additional year in freshwater before spawning (Wydowski and Whitney 1979). In Washington, most populations begin spawning in February or March (Busby *et al.* 1996). Depending on water temperature, steelhead eggs incubate for 1.5 to 4 months before hatching (61 FR 41542). Bjornn and Reiser (1991) noted that steelhead eggs incubate about 85 days at 4˚C and 26 days at 12˚C to reach 50% hatch. In wild populations, juveniles generally migrate to sea at age two, but hatchery conditions permit steelhead to smolt after only a single year (Wydowski and Whitney 1979).

Six stocks of steelhead within the MCR ESU were identified as at risk of extinction or of special concern (Nehlsen *et al*. 1991). Steelhead are still found throughout much of their historic range in the Walla Walla River basin, though populations have declined. Long-term spawning surveys have not been conducted on the Walla Walla River, and, as a consequence, reliable population estimates are unavailable (WDF *et al*. 1993). The WDF *et al*. (1993) identified the stock as depressed and Nehlson *et al.* (1991) identified it as of special concern. Several factors have contributed to the decline of MCR steelhead. These include habitat degradation resulting from grazing and water diversion, overharvest, predation, hydroelectric dams, hatchery introgression, drought, and other natural or human-induced factors (Busby *et al*. 1996).

Currently, steelhead are the only anadromous salmonids known to spawn in the Walla Walla River system (Columbia River Inter-Tribal Fish Commission 2001). Steelhead are found in the Walla Walla River including the North and South Forks and several of their tributaries, Mill Creek and several of its tributaries, Dry Creek, and the Touchet River including the North and South Forks, Wolf Fork, Robinson Fork, Spangler Creek, Lewis Creek, Jim Creek, Patit Creek, and Coppei Creek (Kuttel 2001).

Steelhead begin entering the Walla Walla system as early as September or October but, if necessary, they will delay upstream migration until stream conditions become favorable (Bjornn and Reiser 1991). Peak adult migration occurs in early November but migration timing may vary from year to year depending on weather or flow conditions. Most of the spawning in the Walla Walla River system occurs near the headwaters where riparian vegetation, water temperatures, and gravel are more suitable. Historically, steelhead likely spawned throughout the watershed. In the action area, Dry Creek provides rearing habitat for juvenile steelhead and serves as a migratory corridor for MCR steelhead that spawn farther upstream.

There is no direct commercial fishery on this stock although incidental catch of wild steelhead occurs in the Columbia River. Moreover, the Cayuse, Walla Walla, and Umatillas, known collectively as the Confederated Tribes of the Umatilla Indian Reservation, harvest this stock at unknown numbers.

The WDFW and Oregon Department of Fish and Wildlife (ODFW) monitor spawner escapement for the Walla Walla stock but estimates are imprecise due to partial sampling. However, based on available data, the steelhead stock in the Walla Walla is classified as depressed (WDF *et al*. 1993).

Busby *et al.* (1996) provides 14 independent stock indices for which trends could be computed for MCR steelhead. This analysis indicates that 10 of the stocks were declining and four were increasing during the periods for which data were available. Steelhead in the Touchet River, located in the Walla Walla basin downstream from the project area, are reported to be declining at a rate of 2.7% per year, with the total escapement of more than 5,000 (*op cit*.). Considering that WDFW plants hatchery-raised fish in the Touchet River at Dayton (Kuttel 2001), this represents an inflated estimate of the wild steelhead run size.

2.1.2 Evaluating the Proposed Action

The standards for determining jeopardy are set forth in section 7(a)(2) of the Endangered Species Act (ESA) as defined by 50 CFR Part 402. The NOAA Fisheries must determine whether the action is likely to jeopardize the listed species. This analysis involves the initial steps of defining the biological requirements of the listed species, and evaluating the relevance of the environmental baseline to the species' current status.

Subsequently, NOAA Fisheries evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NOAA Fisheries must consider the estimated level of mortality attributed to the collective effects of the proposed or continuing action, the environmental baseline, and any cumulative effects. This evaluation must take into account measures for survival and recovery specific to the listed salmon's life stages that occur beyond the action area.

2.1.2.1 Biological Requirements

The relevant biological requirements are those necessary for MCR steelhead to survive and recover to naturally reproducing population levels at which time protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment.

Biological requirements are defined as properly functioning conditions (PFC) of habitat conditions that are relevant to any steelhead life stage. These habitat conditions include all parameters of the matrix of pathways and indicators described in NOAA Fisheries (1996). Information related to biological requirements for MCR steelhead can be found in Busby *et al*. (1996). The biological requirements specifically affected by the proposed action include water quality (*i.e.*, sediment/turbidity) and riparian reserves.

2.1.2.2 Environmental Baseline

The environmental baseline represents the current set of basal conditions to which the effects of the proposed action are then added. Environmental baseline is defined as "the past and present impacts of all Federal, state, and private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or informal section 7 consultation, and the impact of state or private actions which are contemporaneous with the consultation process" (50 CFR 402.02). The term "action area" is defined as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action."

The proposed project is located in the Walla Walla River watershed in Walla Walla County, Washington. The Walla Walla River is a tributary to the Columbia River and drains an area of approximately 1,758 square miles with the headwaters in the Blue Mountains and the Palouse Hills. The project area is located along Dry Creek, approximately 15 miles upstream from the confluence with the Walla Walla River (at river mile 29.4). Dry Creek is approximately 35 miles in length and drains an area of approximately 35 square miles (Hancock 2001).

The Dry Creek subbasin is dominated by agricultural land use. Surface waters throughout most of the subbasin lack large woody debris (LWD) and have narrow strips of riparian vegetation. The subbasin is characterized by low stream flows (exacerbated by surface water withdrawals), high water temperatures, heavily silted substrates, and many stream reaches that have been altered by diking and/or channelization (Kuttel 2001). Dry Creek has experienced severe channel incision, with some highly unstable areas downcut 40 to 50 feet (Reckendorf 2001).

Agricultural lands comprise 58% of the watershed, while forestland and rangeland cover 25% and 17% respectively (U.S. Army Corps of Engineers 1997). Agricultural activities have seriously degraded salmonid habitat in many areas of the watershed. Practices such as farming to the edge of streams, removing riparian vegetation, filling off-channel areas, diking and channelization, allowing livestock full access to streams, conversion of native perennial vegetation to annual crops, and irrigation have all played roles in habitat degradation (Bureau of Reclamation 2001; U.S. Army Corps of Engineers 1997; Mendel *et al.* 2001; Saul *et al.* 2001).

The major limiting factor throughout the Walla Walla subbasin appears to be water diversions and withdrawals, which apparently are resulting in low stream flows and fish kills. The WDFW estimates that less than 10% of surface water diversions in the Washington portion of the basin meet state or federal juvenile fish screening criteria (Kuttel 2001). Bireley (2001) reported that over 75% of the diversions identified in the Cooperative Compliance Review Program (CCRP) are located in streams utilized for salmonid spawning, rearing, and migration. The high incidence of non-compliant surface water diversions is a serious threat to federally listed juvenile salmonids. Furthermore, it is likely that the diversions identified in the CCRP may represent only 50% to 60% of surface water diversions currently in use in the Washington portion of the basin. At least 21 irrigation diversions on Dry Creek are known to be in use.

Stream habitats within the action area include a mix of glides and low-gradient riffles; Dry Creek flows over predominantly large-grave/small-cobble substrates with sand and silt deposits, and is at risk for this element due to high sediment loading. Off-channel habitat is nearly nonexistent along this reach because of severe channel incision that has created steep banks and eliminated access to the majority of the historic floodplain; available refugia and off-channel habitat is limited in the action area due to bank erosion, and, consequently, the action area is at risk for these baseline indicators. The action area is at risk for the pool frequency, pool quality, off-channel habitat, and refugia elements.

There is sparse woody vegetation in the action area. Riparian vegetation consists of a thin strip of black locust, black cottonwood, willow, snowberry, elderberry, and reed canarygrass. Woody debris is of small diameter. The action area is not properly functioning for both the woody debris and riparian reserves baseline indicators.

2.1.2.3 Factors Affecting Species Environment within Action Area

In general, the baseline conditions in the Walla Walla subbasin are degraded. The three most limiting factors are water quantity, water quality, and habitat conditions (NOAA Fisheries 2000a). None of the habitat indicators are properly functioning in the action area.

Both legal and illegal water withdrawals for irrigation have significantly reduced water quantity in the Walla Walla River and its tributaries. The stream channel within the action area is characterized by a lack of off-channel habitat, few wetlands, and stream-flow regimes with high winter peaks and low summer flows (and associated high temperatures). Dry Creek has had average flows of 1.4 cubic feet per second (cfs) and has been recorded as low as 0.1 cfs in August from 1949 to 1967 (USGS 1985). Narrow, incised channels, flat gradients, and low flows have conspired to create poor conditions for fish including isolated pools and stagnant flows. Off-channel habitats are nearly non-existent along the reach as a result of severe channel incision (Kuttel 2001).

Some sections in the Lower Walla Walla subbasin (including Dry Creek) have been designated as water quality limited under Section 303(d) of the Clean Water Act because of temperature and pollution. As of 1984, 252,000 tons/year fine sediment were delivered from cropland to streams in the Dry Creek subbasin. For comparison, forestlands delivered 354 tons per year (USDA SCS *et al.* 2001). Water temperatures can reach 74˚F or more in summer months near the project area (Bambrick pers. comm. 2002; Hancock 2001).

Agricultural land uses, urban and rural development, and roads have altered channel dynamics and hydrology in the basin (NOAA Fisheries 2000a). The river banks in the action area are steep and unstable and support only isolated, narrow strips of riparian vegetation. Streambank conditions and floodplain connectivity in the action area are degraded by bank armoring, levees, channelization, and other flood control measures. Stream buffers are very narrow and woody vegetation is mostly immature. The abundance of LWD is extremely low and recruitment of LWD is poor.

2.1.3 Effects Of the Proposed Action

The proposed replacement of the Aldridge Bridge is likely to adversely affect MCR steelhead as determined by the FHWA. The segment of Dry Creek flowing through the action area provides rearing habitat for juvenile steelhead, and is a corridor for steelhead migrations between the Walla Walla River and spawning habitats in the Dry Creek headwaters.

The ESA implementing regulations define "effects of the action" as "the direct and indirect effects of an action on the species together with the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline." Indirect effects are those that are caused by the proposed action, are later in time, but are still reasonably certain to occur (50 CFR 402.02).

The proposed project would replace an existing bridge with a design that improves channel dynamics, water flow, and floodplain connectivity. As such, the primary adverse effects of the project are the direct effects of the construction activities required to replace the existing bridge.

2.1.3.1 Direct Effects

Direct effects are the immediate effects of the project on the species or its habitat. Direct effects result from the agency action and include the effects of interrelated actions and interdependent actions. Future Federal actions that are not a direct effect of the action under consideration (and not included in the environmental baseline or treated as indirect effects) are not evaluated.

Juvenile and adult steelhead may inhabit the action area during the proposed construction periods. Potential direct effects of the proposed project include injury to steelhead during work-area isolation and fish handling, increases in turbidity and temporary disturbance to streambed during construction, removal of riparian vegetation, and an altered hydro-period in Dry Creek resulting from an increase in impervious surface area. Generally, the direct effects are related to the duration (1 to 2 months) of construction activities in or adjacent to Dry Creek. The negative effects associated with the proposed project are likely to be short in duration and will be minimized through restrictions in timing and duration of construction.

2.1.3.1.1 Diversion of Stream and Removal of Fish. After isolating the work area with block nets, a trained fish biologist will use seines and dip nets to capture and/or move fish. This handling has been shown to increase plasma levels of cortisol and glucose in fish (Hemre and Krogdahl 1996, Frisch and Anderson 2000). Subsequently, electrofishing will be conducted. Electrofishing may result in direct mortality of young-of-the-year or juvenile steelhead. Physical injuries from electrofishing include internal hemorrhaging, spinal misalignment, or fractured vertebrae. Although the practice is potentially hard on fish, the electrofishing is intended to further locate residual fish in the isolated work area to reduce the number of fish exposed to construction effects. The likelihood of injury or mortality will be minimized by using a qualified biologist to ensure the safe capture, handling, and release of fish.

The temporary diversion of the creek into a culvert may result in the incidental stranding of juvenile steelhead. Additionally, the diversion of water through a culvert will impede the movement of steelhead for 14 to 15 weeks. The effects of the temporary stream diversion will be minimized by sizing the culvert to ensure fish passage. Moreover, adverse affects to migration will be minimized further by restricting construction activities to August 26 to September 30, when adult steelhead migration and spawning have been completed and out-migrating smolts are expected to have emigrated.

The temporary diversion of the creek through a culvert will also cause a temporal loss of macroinvertebrate habitat. Aquatic invertebrates serve as an important source of prey for salmonids, and the loss of aquatic invertebrate habitat may reduce foraging opportunities for listed salmonids. Effects associated with the disruption of the streambed is likely to be short-lived as invertebrates tend to rapidly recolonize disturbed areas (Allan 1995).

2.1.3.1.2 Water Quality. Deposition of fine sediment can significantly degrade instream spawning habitat, reduce survival of steelhead from egg to emergence (Phillips *et al*. 1975), and reduce intergravel cover (Spence *et al*. 1996). Suspended sediments can cause sublethal effects such as elevated blood sugars and cough rates (Servizi and Martens 1992), physiological stress, and reduced growth rates. Elevated turbidity levels can reduce the ability of salmonids to detect prey, cause gill damage (Sigler 1980, Lloyd *et al*. 1987), and cause juvenile steelhead to leave rearing areas (Sigler *et al*. 1984). Additionally, short-term pulses of suspended sediment have been shown to influence territorial, gill-flaring, and feeding behavior of salmon under laboratory conditions (Berg and Northcote 1985).

Adverse effects will be minimized through recommended restrictions in timing and duration of construction, and the use of temporary erosion and sediment control measures identified in the BA. It is expected that listed species present during construction will seek refugia or will avoid portions of stream with high turbidity and sediment levels. Overall, the increased turbidity and sediment are not expected to influence the environmental baseline over the long term.

2.1.3.1.3 Disturbance of Streambed. Project construction includes the demolition of the existing bridge, placement of dewatering barriers, temporary culverting and backfilling of approximately 60 linear feet (1,440 square feet) of stream channel, and removal of debris and backfill from the construction area. These activities will disturb the substrate of Dry Creek. While it is unlikely that the instream work will affect spawning habitat long-term, instream work will modify habitat by homogenizing the substrate and reducing the diversity of benthic habitat in the river bed. Additionally, the use of heavy equipment in the riparian areas and within the streambed might cause compaction of soils resulting in reduced infiltration at the project site. Such compacting decreases the stability of the banks, reduces recruitment of riparian vegetation, which results increases deposition of fine sediments into the river.

To avoid the loss of functioning stream substrates due to compaction, the contractor will over-excavate the top one-foot of stream substrates and will replace it with one-foot of clean, washed spawning gravels. Additionally, the proposed riparian plantings and removal of the old bridge abutments should result in long-term improvements in streambed conditions within the action area.

2.1.3.1.4 Removal of Riparian Vegetation. The project includes activities that call for removing existing riparian vegetation. To address the environmental results of removed vegetation, the project includes the planting of new riparian vegetation in the action area.

Riparian vegetation links terrestrial and aquatic ecosystems, influences channel processes, contributes organic debris to streams, stabilizes streambanks, and modifies water temperatures (Gregory *et al*. 1991). Removal of vegetation may result in increased water temperatures that would further degrade already impaired water temperatures in the action area. Elevated water temperatures may adversely affect salmonid physiology, growth and development, alter life history patterns, induce disease, and may exacerbate competitive predator-prey interactions (Spence *et al*. 1996). Loss of vegetation also may reduce allochthonous inputs to the stream.

Woody debris provides essential functions in streams including the formation of habitats. Additionally, the removal of vegetation decreases streambank stability and resistance to erosion.

Like most of the Lower Walla Walla subbasin, the action area exhibits poor riparian conditions (Kuttel 2001). The removal of two black locust trees from the riparian zone of Dry Creek could adversely affect the action area which already lacks properly functioning riparian areas. However, the proposed replanting of disturbed riparian areas with willow slips and six cottonwood trees will minimize adverse affects on riparian function in the action area.

2.1.3.1.5 Stormwater. The project will result in an increase in the amount of impervious surface in the action area. There are several adverse effects associated with adding impervious surface such as roads to a watershed. Those adverse effects are described in further detail below. The extent to which steelhead detect adverse effects associated with impervious surfaces depends on several factors. Impervious surfaces can affect steelhead by degrading water quality, water temperature, and/or hydrology of stream habitat. Stormwater treatment facilities and other techniques can reduce the adverse affects of those changes and are incorporated into the project.

Impervious surfaces affect the watershed in several ways. The addition of impervious surface will result in increased stormwater runoff and alteration of existing drainage patterns in the action area. Such effects to hydrology typically include increased frequency and duration of peak flows and the presence of peak flows during periods when none previously existed. Increased impervious area also can shift the hydrologic regime from subsurface to surface runoff and may result in higher and more frequent peak flows even with small storms. Increased peak flows and increased frequency and duration of peak flows can adversely alter steelhead habitat through lateral erosion, bed scour, downcutting, bank de-stabilization, and removal of woody debris. In addition, increasing peak flows reduces groundwater recharge which in turn decreases base flows. Decreased base flow, may create migration barriers, strand fish in disconnected habitats, and increase stream temperatures.

Research indicates a negative relationship between impervious surface and water quality associated with stormwater runoff (Schueler 1984). In urban areas, roads act as conduits of stormwater runoff and pollutants from impervious areas directly to streams. May *et al*. (1997) discussed declines in biological integrity and habitat quantity and quality as the level of impervious surface area increased above five percent. Large rainstorms and subsequent high flows can elevate total suspended solids, turbidity, and nutrient concentrations in urban watersheds. Additionally, chemical water quality generally declines as urbanization increases (May *et al*. 1997). Increased impervious surface also contributes to water temperature increases in streams (Schueler 1984). The addition of impervious surface to the watershed, including riparian areas, will also result in a permanent loss of opportunity for revegetation in the areas where those surfaces are added.

Although there are some city centers with high-density road networks, most of the subbasin has few roads and low-density road networks. The proposed road project will create approximately 9,360 square feet (0.2 acre) of new impervious surface, which is a relatively small increase in the

Lower Walla Walla River basin. The project will not add lanes to the road and does not increase the road network in the action area. The watershed is dominated by large open spaces with ample opportunity to restore vegetation within the watershed without using the newly paved areas.

The proposed project will avoid or minimize adverse changes in hydrology by creating stormwater treatment facilities designed to treat the runoff generated from the road improvement project. Stormwater treatment will minimize disruption of the hydrology of the system, and remove pollutants and fine sediments from surface water. Detention basins will infiltrate treated stormwater, and, consequently, will minimize the adverse affects on instream flows more than detention alone.

The Walla Walla subbasin, including the Dry Creek watershed, has a relatively low-density road network and the bridge replacement will not increase the road network in the watershed. The proposed project will add 0.2 acre of impervious surface to the action area, but the proposed catch basins and stormwater treatment swales will appropriately minimize the effects of stormwater resulting from the proposed project.

2.1.3.1.6 Effects of Interrelated and Interdependent Actions. This project consists of the replacement of the existing substandard bridge with a new two-lane bridge that meets current safety and load requirements. This is an in-kind replacement that will not affect changes in traffic patterns or traffic volumes. Consequently, there are no interrelated or interdependent actions.

2.1.3.2 Indirect Effects

Indirect effects are caused by or result from the proposed action, are later in time, and are reasonably certain to occur. Indirect effects may occur outside of the area directly affected by the action. Indirect effects might include other Federal actions that have not undergone section 7 consultation but will result from the action under consideration. These actions must be reasonably certain to occur, or they are a logical extension of the proposed action.

2.1.3.2.1 Changes in Fluvial Transport and Channel Morphology. The project includes activities that will change fluvial transport and channel morphology. To avoid and minimize the project effects, the project includes the measures described below that will result in a improvement in the baseline condition for fluvial transport and channel morphology.

Channels that have been unaffected by human activities retain suitable water temperatures for the organisms that have evolved in that location. Such channels will have adequate shading, good cover for fish, minimal temperature variations and abundant organic matter input such as leaves, twigs and wood. In contrast, channelized streams tend to have increased water temperatures, less shading from trees, little cover for fish, greater fluctuations in stream temperature and less organic matter input. Natural channels have diverse habitats with varying water velocities as the morphology changes between riffles and pools. The sediment on the channel bottom is sorted and provides many microhabitats for organisms. In contrast, straightened channels tend to consist mostly of riffles and have unsorted gravels that limit the types of habitat available. The diverse nature of natural channels provides resting areas and slow-water refugia during high flow. With less structural diversity, channelized systems have minimal resting areas and organisms are easily swept away during high flows. In low flow periods, natural channels have sufficient water depth to support fish and aquatic species during the dry season. On the other hand, channelized systems may have insufficient depth to sustain required temperatures and dissolved oxygen to sustain life.

The complete removal of the existing bridge and its replacement with a longer, single-span bridge will improve the transport of sediment and LWD. Further improvements will occur from removing the creosote-treated wood abutments from the flood plain. Consequently, the project will result in improvements in fluvial transport and channel morphology in the action area.

2.1.4 Population Trends and Risks

Both long- and short-term trends in abundance of naturally spawning steelhead are declining in the MCR ESU as a whole (Busby *et al* 1999). Especially severe declines occur on the Walla Walla River at Nursery Bridge Dam, where the numbers of summer steelhead have been decreasing by almost 17% per year from 1993 to 1998 (Greer 1998, cited in Busby *et al* 1999). Short-term trends (1987 to 1997) in summer steelhead abundance on John Day River tributaries range from 1 to 21% declines per year. The greatest declines in abundance over the past 10 years have occurred on the mainstem of the John Day river (21%) and on the Deschutes River at Sherrars Falls (12%) (Busby *et al* 1999; Table 7).

Results of decline analysis for the MCR steelhead ESU overall indicates a median population growth rate (lambda) over the base period ranges from 0.88 to 0.75, declining as hatchery fish reproduction increases (McClure *et al* 2000, Table B-1). NOAA Fisheries also estimated the percent increase in lambda required to reduce the risk of a 90 decline in 48 years ranges from zero percent for the Yakima River stock to12% for the Deschutes River stock, assuming no hatchery fish reproduction. If hatchery fish are assumed to reproduce at the same rate as wild fish the percent increase required to prevent a 90% decline in 48 years ranges from zero percent for the Yakima River stock to 32% for the Deschutes River stock (McClure *et al* 2000, Table B-9).

Extensive habitat blockages, water diversions, altered water flow and temperature regimes, and the resulting loss of spawning and rearing habitat for steelhead in the MCR ESU have combined to result in a powerful threat to its persistence. At least two extinctions of steelhead populations have been documented in this ESU (in the Crooked and Metolius Rivers), and the continuing declines in extant populations both with and without hatchery influence are a source of concern.

In the short term the proposed action will have construction-related adverse affects on water quality, in-stream habitat, and riparian reserves. In the long-term, however, the project will result in incremental, beneficial affects to floodplain connectivity, in-stream habitat, and riparian reserves. Additionally, the timing and duration of in-stream work activities will minimize the affects on MCR steelhead. Therefore, the proposed action is unlikely to negatively influence population trends or risks in the action area.

2.1.5 Cumulative Effects

Cumulative effects are defined as "those effects of future state or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation" (50 CFR 402.02). Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA.

In the action area for this project, agricultural activities are the main land use. Riparian vegetation is not properly functioning, as there is very little woody vegetation. Agricultural practices leave little stream buffer width. The NOAA Fisheries does not expect any further habitat degradation from agricultural practices. NOAA Fisheries assumes that non-Federal land owners in those areas will also take steps to minimize or avoid land management practices that would result in the take of MCR steelhead. Such actions are prohibited by section 9 of the ESA.

2.1.6 Conclusion

There will be short-term direct impacts associated with the proposed activities. The temporary diversion of Dry Creek will necessitate the removal of fish from dewatered areas, and will result in displacement of fish in Dry Creek. Moreover, demolition and construction activities will result in temporary increases of sediment and turbidity levels. However, potential adverse effects will be minimized through the use of Best Management Practices (BMP) in the design and construction. The bridge replacement will increase the amount of over-water structure above Dry Creek. This conclusion is based on the following factors: (1) timing restrictions related to in-water construction will minimize impacts to fish and their habitat; (2) replacement of a longer bridge will improve passage conditions for all life stages of salmonids and will improve channel morphology; (3) the installation of stormwater facilities will minimize the effects of increased impervious surface added to the Walla Walla watershed; and (4) riparian vegetation removal will be minimized and replaced. NOAA Fisheries concludes that the proposed action is not likely to impair properly functioning habitat or appreciably reduce the functioning of already impacted habitat. Furthermore, NOAA Fisheries concludes that the proposed action is unlikely to adversely influence existing population trends or risks in the action area. Overall, the proposed activities are not expected to appreciably reduce the likelihood of survival of MCR steelhead. Therefore, the proposed action is not likely to jeopardize the continued existence of MCR steelhead.

2.1.7 Reinitiation of Consultation

Consultation must be reinitiated if the amount or extent of taking specified in the Incidental Take Statement is exceeded, or is expected to be exceeded; new information reveals effects of the action may affect listed species in a way not previously considered; the action is modified in a way that causes an effect on listed species that was not previously considered; or, a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16).

2.2 Incidental Take Statement

Section 9 of the ESA and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species without special exemption. "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Harm is further defined as significant habitat modification or degradation that results in death or injury to listed species by "significantly impairing behavioral patterns such as breeding, spawning, rearing, migrating, feeding, and sheltering" (50 CFR 222.102). Incidental take is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such takings is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the effects of any incidental taking of endangered or threatened species. It also provides reasonable and prudent measures that are necessary to minimize take and sets forth terms and conditions with which the action agency must comply to implement the reasonable and prudent measures.

2.2.1 Amount or Extent of Take Anticipated

As stated in section 2.1.3, above, MCR steelhead use the Action Area for juvenile rearing and migratory purposes. While effects on this ESU can be minimized and even avoided by timing construction activities for periods of low presence, MCR steelhead can be encountered in the Walla Walla River throughout the year. Therefore, incidental take of these listed fish is reasonably certain to occur. The proposed action includes measures to reduce the likelihood and amount of incidental take. As stated above, these measures have been restated in the Terms and Conditions below, to ensure the action agency carries them out.

Take is likely to result through "harm" (habitat modification; see 50 CFR 222.102). Harm will occur during construction and includes the activities used to move fish during work-site isolation. Harm from work-site isolation techniques can be estimated in terms of numbers of fish affected. For other habitat affecting activities, NOAA Fisheries cannot estimate a specific amount of incidental take of individual MCR steelhead, despite the use of the best scientific and commercial data available. As a surrogate for estimating the number of fish harmed by the proposed action, NOAA Fisheries has estimated the extent of habitat affected by those activities. The estimated extent of habitat affected from construction activities (e.g., sediment mobilization, stream dewatering, and short-term loss of riparian habitat) are the thresholds for reinitiating consultation.

For water quality effects, the extent of take is that to which could occur from turbidity increases within 100 feet downstream of the project area (for flows up to 10 cfs, the expected level) or 200 feet if flows exceed 100 cfs (WDOE 1997). For streambank stabilization, the extent of anticipated take is that which could result from up to 700 feet of stabilization. For work-site isolation and temporary river diversion, the extent of take anticipated is that which could occur from the temporary diversion of up approximately 60 liner feet (1440 square feet) of the Dry Creek channel.

For take from electrofishing techniques, the extent of take anticipated is two fish (NOAA Fisheries 2002a, 2002b). An estimate of the number of listed fish expected to be encountered during work-site isolation was obtained using the results of similar fish removal activities in Dry Creek and the Walla Walla River in August 2002 (NOAA Fisheries 2002a, 2002b).

Table 1. Estimate of nonlethal and lethal take associated with proposed project requiring isolation of an in-water work area and electrofishing to collect and remove fish.

Species	***Life stage***	***Estimated Total catch***	***Nonlethal Take of ESA-listed fish***	***Lethal Take of ESA-listed fish***
MCR steelhead	juvenile	20	18	2

NOAA Fisheries will update this estimate of incidental take before March 31 each year after reviewing information from the preceding year describing isolation of in-water work area operations. Because of the timing of the in-water work period, capture and release of adult fish is not expected to occur as part of the proposed isolation of in-water work areas. Consequently, NOAA Fisheries does not anticipate that any adult fish will be taken.

Should any one of these limits be exceeded, construction must stop and the action agency must reinitiate consultation.

2.2.2 Reasonable and Prudent Measures

NOAA Fisheries believes that the following reasonable and prudent measures (RPMs) are necessary and appropriate to minimize take of MCR steelhead. These RPMs reflect measures described as part of the proposed action in the BA and the foregoing Opinion. NOAA Fisheries has included them here to ensure the action agency is aware that they are mandatory.

To minimize incidental take, FHWA will ensure the effective administration of the conservation BMPs, RPMs and Terms and Conditions (T&Cs) included in this Opinion.

1. The FHWA will ensure minimization of incidental take from isolation and fish handling activities.

2. The FHWA will ensure minimization of incidental take from in-water construction activities by restricting the timing, duration, and extent of construction within the OHWM.

3. The FHWA will ensure minimization of incidental take from construction activities near the stream by minimizing the risk of effects from erosion and water pollution.

4. The FHWA will ensure minimization of take from effects on riparian and instream habitat.

2.2.3 Terms and Conditions

To comply with ESA section 7 and be exempt from the prohibitions of section 9 of the ESA, the FHWA must ensure compliance with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions largely reflect measures described as part of the proposed action in the BA and the foregoing Opinion. NOAA Fisheries has included them here to ensure the action agency is aware that they are non-discretionary.

1. To implement RPM No. 1 (isolation and fish handling), the FHWA will ensure that the following requirements are fully implemented.

   a. Probability of encountering listed fishes will be reduced to the maximum extent possible by conducting in-water construction only within the approved fish work window of July 15 to September 30. Any additional extensions of the in-water work period must be coordinated with NOAA Fisheries and WDFW.

   b. The work area will be well isolated from the flowing stream using the measures described in the BA.

   c. Any listed fish that may be trapped within the isolated work area will be captured and released using appropriate methods, including supervision by a fishery biologist experienced with work area isolation and competent to ensure the safe handling of all ESA-listed species.

   d. The capture team must comply with NOAA Fisheries' electrofishing guidelines (NOAA Fisheries 2000a http://www.nwr.noaa.gov/1salmon/salmesa/4docs/final4d/electro2000.pdf).

   e. The capture team must handle ESA-listed fish with extreme care, keeping fish in water to the maximum extent possible during capture and transfer procedures to prevent the added stress of out-of-water handling.

   f. Captured fish must be released outside of the isolated work area, as near as possible to the capture area.

g. ESA-listed fish that die during the project may not be transferred to anyone except NOAA Fisheries personnel, unless otherwise approved in writing by NOAA Fisheries.

h. NOAA Fisheries or its designated representative must be allowed to accompany the capture team during the capture and release activity, and must be allowed to inspect the capture team's capture and release records and facilities.

i. All take of listed salmonids during work area isolation must be documented and reported using the format attached in Appendix 1. The FHWA will ensure that NOAA Fisheries receive the monitoring reports of take within one month beginning when the initial work area isolation activities commence until in-water construction activities cease. The reports will be sent to NOAA Fisheries, Attention: Mike Grady, 510 Desmond Drive SE, Suite 103, Lacey, WA 98503.

2. To implement RPM No. 2 (construction within the OHWM) above, the FHWA will ensure that:

   a. All work within the active channel of Dry Creek will be completed between July 15 and September 30. Extensions of the in-water work period will be coordinated with NOAA Fisheries and WDFW.

   b. All water intakes used to de-water in-stream work areas, will have fish screens installed, operated, and maintained according to NOAA Fisheries' fish screen criteria. (NOAA Fisheries 1996b http://www.nwr.noaa.gov/1hydrop/pumpcrit1.htm).

   c. All equipment used for in-water work will be cleaned prior to entering the active channel of Dry Creek. External oil and grease will be removed. Untreated wash and rinse water will not be discharged into streams and rivers without adequate treatment to remove debris, nutrients, sediment, petroleum hydrocarbons, metals and other pollutants likely to be present.

   d. Stationary power equipment operated within 150 feet of any stream or wetland will be protected to prevent leaks.

   e. Material removed during excavation will only be placed in a manner that prevents it from eroding back into the channel.

   f. Measures will be taken to prevent construction debris from falling into the stream or riparian area. Any material that falls into a stream during construction operations will be removed in a manner that has a minimum impact on the streambed and water quality.

3. To implement RPM No. 3 (construction activities adjacent to stream), the FHWA will ensure that:

a. All temporary erosion and sediment control (TESC) and pollution control measures included in the BA are included as provisions in the contract. The TESC plan will outline how and to what specifications various erosion control devices will be installed to meet water quality standards, and will provide a specific inspection protocol and time response. The TESC plan will address access roads, stream crossings, construction sites, equipment and materials storage sites, fueling operations, staging areas, cement, mortars and bonding agents, hazardous materials, spill containment and notification, construction debris, and inspection and placement of erosion controls. Erosion control measures will be sufficient to ensure that water quality standards conditions do not negatively impact MCR steelhead. The TESC plan will be maintained on site and will be available for review upon request.

b. The Contractor will develop an adequate, site-specific Spill Prevention and Countermeasure or Pollution Control Plan (PCP) and is responsible for the containment and removal of any toxicants released.

c. TESC measures are in-place at all times during the contract. Construction within the project vicinity will not begin until all temporary erosion controls (*e.g.*, sediment barriers and containment curtains) are in place. Erosion control structures will be maintained throughout the life of the contract.

d. Boundaries of clearing limits associated with site access and construction will be marked to minimize disturbance of riparian vegetation and other sensitive sites.

e. Areas for fuel storage, refueling, and servicing of construction equipment and vehicles will be at least 150 feet from the stream channel and all machinery fueling and maintenance will occur within a contained area. Fueling large cranes, pile drivers or drill rigs may occur within 150 feet with full containment systems in place and notification of the project engineer, WSDOT environmental staff, and NOAA Fisheries. Overnight storage of vehicles and equipment must also occur in designated staging areas.

f. No surface application of nitrogen fertilizer will be used within 50 feet of any water of the state of Washington.

4. To implement RPM No. 4 (riparian and in-stream habitat protection), the FHWA will ensure that:

a. Alteration of native vegetation will be minimized. Vegetation will only be grubbed from areas undergoing permanent alteration. No grubbing will occur in areas slated for temporary impacts.

b. Disturbed soils, including riparian vegetation will be replaced with a native seed mix, shrubs, and trees. All disturbed riparian areas will be replanted with native woody species at the planting density outlined in the BA.

c. Riprap used for protection of bridge abutments will be clean, the minimum possible size, and will be "placed" not dumped. Bank stabilization design will follow the Integrated Streambank Protection Guidelines (ISPG) as much as possible (WDFW and Inter-Fluve 2002).

d. Areas of riprap (bridge abutments) will be backfilled with soil and planted with species capable of rapid regeneration as described the BA planting plan (*e.g.*, willow fascines).

e. Heavy equipment will be limited to that with the least adverse effects of the environment, (*e.g.*, minimally sized vehicles.)

f. Vehicles and machinery must cross riparian areas and streams at right angles whenever possible.

5. To implement RPM No. 6 (monitoring), the FHWA will ensure that:

a. NOAA Fisheries, Washington Habitat Branch, receive in-water construction monitoring reports as described in Terms and Condition 1.i.

b. Erosion control measures as described above in RPM No. 3 and 4 will be monitored.

c. All riparian plantings will be monitored yearly for three years to ensure that finished grade slopes are at stable angles of repose and that woody plantings are achieving a minimum of 80% cumulative survival.

d. If the success standard specified above in RPM 5.c is not achieved, dead plantings will be replaced to bring the site into conformance. If failed plantings are deemed unlikely to succeed, replacement plantings will be conducted at other appropriate locations in the project area.

e. By December 31 of the year following the completion of construction, the FHWA will submit a monitoring report with the results of the monitoring required in terms and conditions 5.a and 5.b above. Send report to NOAA Fisheries, Attention: Mike Grady, 510 Desmond Drive SE, Suite 103, Lacey, WA 98503.

f. In each of the two years following completion of construction, the FHWA will submit to NOAA Fisheries (Washington Branch) a monitoring report with the results of monitoring requirements of 6.d above. Send report to NOAA Fisheries, Attention: Mike Grady, 510 Desmond Drive SE, Suite 103, Lacey, WA 98503.

3.0 MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT

3.1 Background

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), established procedures designed to identify, conserve, and enhance EFH for those species regulated under a Federal fisheries management plan. Pursuant to the MSA:

- Federal agencies must consult with NOAA Fisheries on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH (section 305(b)(2));
- NOAA Fisheries must provide conservation recommendations for any Federal or State activity that may adversely affect EFH (section 305(b)(4)(A));
- Federal agencies must provide a detailed response in writing to NOAA Fisheries within 30 days after receiving EFH conservation recommendations. The response must include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the conservation recommendations of NOAA Fisheries, the Federal agency must explain its reasons for not following the recommendations (section 305(b)(4)(B)).

Essential Fish Habitat means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA section 3). For the purpose of interpreting this definition of EFH: Waters include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; substrate includes sediment, hard bottom, structures underlying the waters, and associated biological communities; necessary means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and "spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle (50 CFR 600.110). Adverse effect means any impact which reduces quality and/or quantity of EFH, and may include direct (*e.g.*, contamination or physical disruption), indirect (*e.g.*, loss of prey or reduction in species fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810).

Essential Fish Habitat consultation with NOAA Fisheries is required regarding any Federal agency action that may adversely affect EFH, including actions that occur outside EFH, such as certain upstream and upslope activities.

The objectives of this EFH consultation are to determine whether the proposed action would adversely affect designated EFH and to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse effects to EFH.

3.2 Identification of Essential Fish Habitat

Pursuant to the MSA the Pacific Fisheries Management Council (PFMC) has designated EFH for three species of federally-managed Pacific salmon: chinook; coho (*O. kisutch*), and Puget Sound pink salmon (*O. gorbuscha*) (PFMC 1999). Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC 1999), and longstanding, naturally impassable barriers (i.e., natural waterfalls in existence for several hundred years). Detailed descriptions and identifications of EFH for salmon are found in Appendix A to Amendment 14 to the Pacific Coast Salmon Plan (PFMC 1999). Assessment of potential adverse effects to these species' EFH from the proposed action is based, in part, on this information.

3.3 Proposed Actions

The proposed project is detailed above in sections 1.3 and 1.4 of this document. The action area includes habitats that have been designated as EFH for various life-history stages of chinook.

3.4 Effects of Proposed Actions

As described in detail in section 2.1.3 of this document, the proposed action may result in detrimental short-term impacts to a variety of habitat parameters. These adverse effects are:

1. Short-term degradation of benthic foraging habitat because of the temporary diversion of approximately 60 linear feet of the stream channel.

2. Short-term degradation of water quality in the action area because of an increase in turbidity related to construction activities, creation of in-water fish structures and potential contaminants during construction.

3. Short-term degradation of riparian habitat because of temporary loss of two trees from the riparian area of Dry Creek.

3.5 Conclusion

NOAA Fisheries believes that the proposed actions may adversely affect EFH for chinook salmon.

3.6 Essential Fish Habitat Conservation Recommendations

Pursuant to Section 305(b)(4)(A) of the MSA, NOAA Fisheries is required to provide EFH conservation recommendations to Federal agencies regarding actions that will adversely affect EFH. While NOAA Fisheries understands that the conservation measures described in the BA will be implemented by the FHWA, it does not believe that these measures are sufficient to address the adverse impacts to EFH described above. Consequently, NOAA Fisheries recommends that the FHWA implement the following conservation measures to minimize the potential adverse effects to EFH for chinook salmon:

1. All work within the active channel of Dry Creek should be completed between July 15 and September 30. Extensions of the in-water work period should be coordinated with NOAA Fisheries and WDFW.
2. All equipment used for in-water work should be cleaned prior to entering the active channel of Dry Creek. External oil and grease should be removed. Untreated wash and rinse water should not be discharged into streams and rivers without adequate treatment to remove debris, nutrients, sediment, petroleum hydrocarbons, metals and other pollutants likely to be present.
3. Stationary power equipment operated within 150 feet of any stream or wetland should be protected to prevent leaks.
4. Material removed during excavation should only be placed in a manner that prevents it from eroding back into the channel.
5. Measures should be taken to prevent construction debris from falling into the stream or riparian area. Any material that falls into a stream during construction operations should be removed in a manner that has a minimum impact on the streambed and water quality.
6. All temporary erosion and sediment control (TESC) and pollution control measures included in the BA should be included as provisions in the contract. The TESC plan will outline how and to what specifications various erosion control devices should be installed to meet water quality standards, and will provide a specific inspection protocol and time response. The TESC plan should address access roads, stream crossings, construction sites, equipment and materials storage sites, fueling operations, staging areas, cement, mortars and bonding agents, hazardous materials, spill containment and notification, construction debris, and inspection and placement of erosion controls. Erosion control measures should be sufficient to ensure that water quality standards conditions do not negatively impact MCR steelhead. The TESC plan should be maintained on-site and will be available for review upon request.
7. The Contractor should develop an adequate, site-specific Spill Prevention and Countermeasure or Pollution Control Plan (PCP) and is responsible for the containment and removal of any toxicants released.
8. TESC measures should be in-place at all times during the contract. Construction within the project vicinity will not begin until all temporary erosion controls (*e.g.*, sediment barriers and containment curtains) are in place. Erosion control structures should be maintained throughout the life of the contract.
9. Boundaries of clearing limits associated with site access and construction should be marked to minimize disturbance of riparian vegetation and other sensitive sites.
10. Areas for fuel storage, refueling, and servicing of construction equipment and vehicles should be at least 150 feet from the stream channel and all machinery fueling and maintenance will occur within a contained area. Fueling large cranes, pile drivers or drill rigs may occur within 150 feet with full containment systems in place and notification of the project engineer, WSDOT environmental staff, and NOAA Fisheries. Overnight storage of

vehicles and equipment should also occur in designated staging areas.

11. No surface application of nitrogen fertilizer should be used within 50 feet of any water of the state of Washington.
12. Alteration of native vegetation should be minimized. Vegetation should only be grubbed from areas undergoing permanent alteration. No grubbing will occur in areas slated for temporary impacts.
13. Disturbed soils, including riparian vegetation should be replaced with a native seed mix, shrubs, and trees. All disturbed riparian areas should be replanted with native woody species at the planting density outlined in the BA.
14. Riprap used for protection of bridge abutments should be clean, the minimum possible size, and will be "placed" not dumped. Bank stabilization design should follow the Integrated Streambank Protection Guidelines (ISPG) as much as possible (WDFW and Inter-Fluve 2002).
15. Areas of riprap (bridge abutments) should be backfilled with soil and planted with species capable of rapid regeneration as described the BA planting plan (*e.g.*, willow fascines).
16. All riparian plantings should be monitored yearly for three years to ensure that finished grade slopes are at stable angles of repose and that woody plantings are achieving a minimum of 80% cumulative survival.
17. If the success standard specified above in Conservation Recommendation #17 is not achieved, dead plantings should be replaced to bring the site into conformance. If failed plantings are deemed unlikely to succeed, replacement plantings should be conducted at other appropriate locations in the project area.

3.7 Statutory Response Requirement

Pursuant to the MSA (§305(b)(4)(B)) and 50 CFR 600.920(k), Federal agencies are required to provide a detailed written response to NOAA Fisheries' EFH conservation recommendations within 30 days of receipt of these recommendations. The response must include a description of measures proposed to avoid, mitigate, or offset the adverse impacts of the activity on EFH. In the case of a response that is inconsistent with the EFH conservation recommendations, the response must explain the reasons for not following the recommendations, including the scientific justification for any disagreements over the anticipated effects of the proposed action and the measures needed to avoid, minimize, mitigate, or offset such effects.

3.8 Supplemental Consultation

The FHWA must reinitiate EFH consultation with NOAA Fisheries if the proposed action is substantially revised in a manner that may adversely affect EFH, or if new information becomes available that affects the basis for NOAA Fisheries' EFH conservation recommendations (50 CFR 600.920(l)).

4.0 REFERENCES

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APPENDIX I
In-Water Construction Monitoring Report

In-Water Construction Monitoring Report
Aldridge Bridge Replacement Project (NOAA Fisheries WSB-02-196)

Start Date: ________________
End Date: ________________

Waterway: Dry Creek (WRIA 32), Walla Walla County

Construction Activities:
____
____
____
____
____

Number of fish observed: ____________
Number of salmonid juveniles observed (what kind?): ____________________________________
Number of salmonid adults observed (what kind?):
____

What were fish observed doing prior to construction?_____________________________________
____
____

What did the fish do during and after construction? _______________________________________
____
____
____

Number of fish stranded as a result of this activity: ___________

How long were the fish stranded before they were captured and released to flowing water?
____
____
____

Number of fish that were killed during this activity: ___________

Send report to:

National Marine Fisheries Service, Washington State Habitat Branch, 510 Desmond Dr. SE, Suite 103, Lacey, WA 98503